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10/797,000	03/11/2004	Yoshinori Ogawa	12480-000040/US	4643
30593	7590	12/10/2007	EXAMINER	
HARNESS, DICKEY & PIERCE, P.L.C.			AMADIZ, RODNEY	
P.O. BOX 8910			ART UNIT	PAPER NUMBER
RESTON, VA 20195			2629	
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			12/10/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/797,000

**Applicant(s)**

OGAWA ET AL.

**Examiner**

Rodney Amadiz

**Art Unit**

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4, 8, 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakao (USPGPUB 2001/0003431—hereinafter “Nakao”) in view of Liaw et al. (U.S. Patent 6,593,934—hereinafter “Liaw”).

As to **Claim 1**, Nakao teaches a display device, comprising: a display panel (**Fig. 6, Reference Number 1**) including a plurality of pixels provided in matrix in a first direction and in a second direction (**Fig. 7, A**), the second direction intersecting with the first direction (**Fig. 7, see 15 intersecting 14**); a driving section (**Fig. 6, Reference Numbers 3, 4 and 5 and Pg. 1, ¶'s 5-8**) for sequentially driving, in the second direction, each pixel line provided along the first direction, the driving section causing the display panel to display an image that is in accordance with display data (**Pg. 1, ¶'s 5-8**); a reference voltage generating section (**Fig. 1, 41**) for generating reference voltages (**Fig. 1, R0-R7**) that represent multiple gradations (**Pg. 4, ¶ 64 and 65**), the reference voltages being used for displaying the image in the multiple gradations (**Pg. 4, ¶ 64 and 65**); a gamma-correction adjustment section (**Fig. 1, 42 and Fig. 2**) for adjusting the reference voltages (**Fig. 1, R0-R7**) so as to perform gamma-correction of the display data (**Pg. 2, ¶ 22, Pg. 3, ¶ 46, Pg. 4, ¶ 65 and Pg. 5, ¶ 76**); and controlling

the gamma-correction adjustment section so as to change the reference voltages on which the gamma-correction has been performed (***Pg. 2, ¶ 21, 25, Pg. 6, ¶'s 88-91 and Pg. 7, ¶ 99***) in accordance with the gamma correction adjustment data supplied to terminals different from terminals via which the display data is supplied (***See Fig. 10 and note separate terminals "D" and "VR", furthermore note that element 39 is replaced with element 41 as per Pg. 4, ¶'s 63 and 64***), and decreasing display unevenness between pixels that are adjacent to one another in at least one of the first and the second directions (***inherent because gamma corrections are being altered according to the liquid crystal material (Pg. 2, ¶ 18); therefore if two adjacent pixels have different materials then a gamma correction is made so that both pixels output the same optical characteristics—See also Pg. 6, ¶ 96***).

Nakao, however, fails to teach a memory for separately storing gamma correction adjustment data and display data and the gamma correction adjustment data being supplied from terminals different from terminals via which the display data is supplied. Examiner cites Liaw to teach a memory (***Fig. 1, 21***) for separately storing gamma correction adjustment data and display data (***Col. 6, lines 21-56***). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to provide a memory that separately stores two types of data as taught by Liaw in the display device taught by Nakao in order to reduce the size of the display by consolidating to form a single memory.

Although Nakao teaches a controller (***Fig. 6, 5***), he fails to teach that it is the device that controls the gamma-correction adjustment section so as to change the

reference voltages on which the gamma-correction has been performed in accordance with the gamma correction adjustment data. Examiner cites Liaw to teach a control section for controlling a gamma-correction adjustment section so as to change the reference voltages on which the gamma-correction has been performed in accordance with the gamma correction adjustment data (**Col. 6, line 57—Col. 7, line 31**). At the time the invention was made it would have been obvious to a person of ordinary skill in the art to replace the Controller taught by Nakao with the controller taught by Liaw in order to have one device which manages the operations of the display and effectively communicates with the entire display system.

Finally, Nakao, as modified by Liaw fails to teach that the memory section is rewritable and nonvolatile. Examiner takes Official Notice that rewritable, nonvolatile memories are old and well-known in the art. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to utilize a rewritable, nonvolatile memory in the display device taught by Nakao, as modified by Liaw, in order to prevent data loss while possessing the ability to update the display devices parameters.

As to **Claim 2**, Liaw teaches that the memory section is provided in the control section (***Liaw—See Fig. 7A, 20***).

As to **Claim 3**, Nakao, as modified by Liaw teaches that the memory section is provided in the driving section (***Note that the combination of Nakao and Liaw yields the result of having the memory section in the driving section—refer to claim 1***).

As to **Claim 4**, Nakao teaches that the display panel is divided into a plurality of display regions aligned in the first direction (**Fig. 6, 3—note that each source driver controls a different display region**); and the driving section includes a plurality of drivers for driving the plurality of display regions respectively (**Fig. 6, 3**).

As to **Claim 8**, Nakao teaches that the display panel includes: a thin-film transistor panel (**Fig. 6, 1**) including (i) a plurality of pixel electrodes (**Fig. 7, 11**) and (ii) thin-film transistors (**Fig. 7, 13**) respectively for the plurality of pixel electrodes (**See Fig. 7**); and an opposed panel on which opposed electrodes are provided (**Fig. 6, 2**); and the thin-film transistor panel and the opposed panel are provided in an overlapping manner so that an electrode formation surface of the thin-film transistor panel and an electrode formation surface of the opposed panel face one another (**See Fig. 6 and Pg. 1, ¶'s 3-8**).

As to **Claim 10**, Nakao, as modified by Liaw, teaches that the memory section is provided in the plurality of drivers (**Note that for the display to work properly each driver must be provided with the proper data (i.e. display data and gamma correction adjustment data)**).

As to **Claim 11**, all of the claim limitations have been addressed with respect to claim 1. Note that the claim language of claim 1 is more specific than the claim language in claim 11. Therefore all the "means" of claim 11 have already been addressed in claim 1.

3. Claims 6, 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakao and Liaw in view of Applicant's Admitted Prior Art (herein after AAPA).

As to **Claim 6**, Nakao, as modified by Liaw, fails to teach that the display panel includes a plurality of separate display panels provided in a surface direction of the display panel. Examiner cites AAPA to teach a display panel including a plurality of separate display panels provided in a surface direction of the display panel (***See Fig. 13 and Pg. 3, second to last paragraph—Pg. 5, second to last paragraph***). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to incorporate a plurality of separate display panels as taught by AAPA in the display device taught by Nakao, as modified by Liaw, in order to produce a modular display which encompasses several panels that are easier to repair.

As to **Claim 7**, Nakao, as modified by Liaw, fails to teach that the display panel includes a plurality of small display panels that are bonded together so that display screens of the plurality of small display panels are on a same plane. Examiner cites AAPA to teach a plurality of small display panels that are bonded together so that display screens of the plurality of small display panels are on a same plane (***See Fig. 13 and Pg. 3, second to last paragraph—Pg. 5, second to last paragraph***). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to incorporate a plurality of small display panels that are bonded together so that display screens of the plurality of small display panels are on a same plane as taught by AAPA in the display device taught by Nakao, as modified by Liaw, in order to produce a modular display which encompasses several panels that are easier to repair.

As to **Claim 9**, most of the claim limitations have already been addressed with respect to claim 8 with the exception of the display panel including a plurality of thin-film transistor panels and that the plurality of thin-film transistor panels are bonded together so that display screens of the plurality of thin-film transistor panels are on a same plane. Nakao, as modified by Liaw, fails to teach the display panel including a plurality of thin-film transistor panels and that the plurality of thin-film transistor panels are bonded together so that display screens of the plurality of thin-film transistor panels are on a same plane. Examiner cites AAPA to teach the display panel including a plurality of thin-film transistor panels and that the plurality of thin-film transistor panels are bonded together so that display screens of the plurality of thin-film transistor panels are on a same plane (*See Fig. 13 and Pg. 3, second to last paragraph—Pg. 5, second to last paragraph*). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to incorporate a plurality of thin-film transistor panels that are bonded together so that display screens of the plurality of thin-film transistor panels are on a same plane as taught by AAPA in the display device taught by Nakao, as modified by Liaw, in order to produce a modular display which encompasses several panels that are easier to repair.

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakao and Liaw in view of Nakamura (USPGPUB 2003/0043132—hereinafter “Nakamura”).

As to **Claim 5**, Nakao, as modified by Liaw, fails to teach that the reference voltage generating section includes a plurality of reference voltage generating circuits



that are respectively for colors used for performing color display of the image. Examiner cites Nakamura to teach that the reference voltage generating section includes a plurality of reference voltage generating circuits that are respectively for colors used for performing color display of the image (*Fig. 2, 20*). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to incorporate separate color voltage reference generators as taught by Nakamura in the display device taught by Nakao, as modified by Liaw, in order to generate the gradation reference voltage group for each specific color, thereby controlling each color separately in order to enhancing the optical characteristics of the display device (*Nakamura—Pg. 3, ¶ 41*).

#### ***Response to Arguments***

5. Applicant's arguments with respect to claims 1-11 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

***Inquiries***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rodney Amadiz whose telephone number is (571) 272-7762. The examiner can normally be reached on M-F 8:30-5:00.

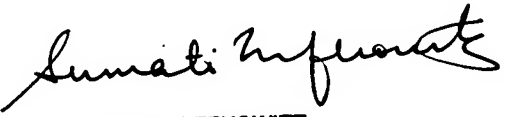
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (571) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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